

Remarks:

Reconsideration of the application is requested.

Claims 1-7 and 9-22 are now in the application. Claims 1-6 have been amended. Claim 8 has been canceled.

In item 6 of the above-identified Office action, the Examiner has rejected claims 2-5 as being indefinite under 35 U.S.C. § 112, second paragraph. More specifically, the Examiner has stated that, "at least partly" as used in claims 2 and 4 is a relative phrase and renders the claims indefinite. Claims 2 and 4 have been amended to remove the phrase "at least partly".

The Examiner rejected claims 3 and 5 for containing undefined phrases, "other carbonized organic fibers" and "other silicides", respectively. These phrases have been deleted from the claims. Accordingly, claims 3 and 5 are now definite.

Accordingly, the specification and the claims meet the requirements of 35 U.S.C. § 112, first and second paragraphs. Should the Examiner find any further objectionable items, counsel would appreciate a telephone call during which the matter may be resolved. The changes are neither provided for overcoming the prior art nor do they narrow the scope of the

claim for any reason related to the statutory requirements for a patent.

In item 8 of the Office action, the Examiner rejected claims 1-3, 5, and 7-12 as being fully anticipated by Tredway et al. (U.S. 5,552,213) under 35 U.S.C. § 102(b). The rejection has been noted and the claims have been amended in an effort to define more clearly the invention of the instant application. Support for the changes is found on page 15, lines 7-8, of the specification.

Before discussing the prior art in detail, a brief review of the invention as claimed is provided. Claim 1 calls for, *inter alia*, a composite material having the following features:

a ceramic matrix consisting essentially of phases of silicon, carbon, and silicon carbide ...

Tredway involves glassy materials. In contrast, the claimed ceramic matrix is made of phases of silicon, carbon, and silicon carbide.

Accordingly, none of the references, whether taken alone or in any combination, either show or suggest the features of claim 1. Therefore, claim 1 is patentable over the art. And,

because all of the dependent claims are ultimately dependent on claim 1, they are believed to be patentable as well.

In item 10 of the Office action, the Examiner rejected claims 4, 6, and 13-22 as being unpatentable over Tredway in view of Beier et al. (U.S. 6,316,086) under 35 U.S.C. §103(a). Claims 4, 6, and 13-22 ultimately depend on claim 1. For the reasons stated above, claim 1 (and therefore the claims depending therefrom) is patentable over the cited art. More specifically, Beier is directed to glass matrix composites. In contrast, amended claim 1 involves, "A ceramic matrix consisting essentially of phases of silicon, carbon, and silicon carbide." Furthermore, while Beier mentions using SiC, BN, boron carbide, titanium carbide, carbon, and silicon as fillers (see col. 5, lines 1-17 and 26-43), the phrase "consisting essentially of" in amended claim 1, avoids any such suggestion from Beier.

Claim 6 has been amended to remove the reference to aluminum.

Claim 8 has been deleted to prevent a repeated claim and not for reasons relating to the prior art.

In view of the foregoing, reconsideration and allowance of claims 1-7 and 9-22 are solicited. In the event the Examiner should still find any of the claims to be unpatentable, please

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telephone counsel so that patentable language can be substituted. In the alternative, the entry of the amendment is requested as it is believed to place the application in better condition for appeal, without requiring extension of the field of search.

Please charge any fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,

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Version with Markings to Show Changes Made:In the Claims:

Cancel claim 8.

Claim 1 (thrice amended). A composite material, comprising:

a ceramic matrix [predominantly including at least one substance selected from the group consisting of carbon, silicide, boron, aluminum, zirconium, silicon carbide, silicon nitride, boron nitride, boron carbide, S<sub>i</sub>BCN, TiC, iron silicides, and other silicides] consisting essentially of phases of silicon, carbon, and silicon carbide; and

fiber bundles having two different fractions including a reinforcing fiber bundle fraction and a matrix fiber bundle fraction having lengths with different averages, each of said fiber bundles having a weight, said weights being proportional to said fiber bundle lengths, said weights being plotted on a total fiber bundle distribution, and said fractions of fiber bundles being separated by a minimum in said total fiber bundle distribution.

Claim 2 (amended). The composite material according to claim 1, wherein at least a portion of said fiber bundles [at least partly] have at least one protective layer.

Claim 3 (twice amended). The composite material according to claim 1, wherein said fiber bundles contain fibers selected from the group consisting of carbon fibers, graphite fibers, SiC-fibers, aluminum oxide fibers,  $\text{Al}_2\text{O}_3\text{SiO}_2$ -fibers,  $\text{Al}_2\text{O}_3\text{SiO}_2\text{B}_2\text{O}_3$ -fibers, carbonized cellulose fibers, carbonized wood fibers, [other carbonized organic fibers] and fibers resistant to elevated temperatures based on compounds containing Si,C,B,N,Al.

Claim 4 (amended). The composite material according to claim 1, wherein said fiber bundles contain at least one of nano fibers, whiskers and nanotubes [at least partly in place of fibers].

Claim 5 (amended). The composite material according to claim 1, wherein said ceramic matrix additionally contains phases of at least one [substance selected from the group consisting] of [carbon, silicon, boron,] aluminum, zirconium [and alloys selected from the group consisting of silicon carbide] , silicon nitride, [silicon oxide,] boron nitride, boron carbide,  $\text{SiBCN}$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{ZrO}_2$ ,  $\text{TiC}$ , and iron silicides[, other silicides and glass-ceramics].

Claim 6 (amended). The composite material according to claim 5, wherein said ceramic matrix contains additions selected

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from the group consisting of iron, chromium, titanium,  
molybdenum, and nickel [and aluminum].